FGDC Don't Duck Metadata
Metadata Cliff Notes

A quick reference guide for writing quality metadata

General Recommendations

Use the 'Green Book' (CSDGM Workbook)
This resource is filled with many rich explanations and examples

For DOQQ's and other large data sets with many tiles…
Create a single metadata record for the entire data set if time and resources are short, BUT try to create new, more accurate metadata as you build regional subsets. Eventually, try to create independent files for each image.

Section 1: Identification

Citation (1.1)

Originator (8.1)
It is recommended that you indicate the party responsible for the data set. While that is most commonly the organization that developed the data set, in some cases, it is not. For example, if a county planning department hires a contractor to build a street centerline road file, the planning department, not the contractor should be identified as the Originator. The contractor should be fully cited using the Data_Set_Credit (1.11) element, e.g. *'this data set was developed for the Wayne County Planning Department by Smith Engineering, Inc'*.

Publication_Date (8.2)
The date that the data was published or otherwise made available. Remember format: YYYY/MM/DD.

Title (8.4)
- Minimum - where, what, when,
- Best practice – who, why, resolution, filename, source
  e.g. *Aquifer Systems and Recharge Potential in Louisiana from LDEQ source data, Geographic NAD83, LOSCO (1999) [aqrgeog3dpdeq]*

Online_Linkage (8.10)
If the data is available online from the Originator, list the URL that leads directly to the dataset. If you would prefer to point to a data distribution / clearinghouse website, use the Network_Resource_Address (6.4.2.2.1.1.1) field of the Distribution section.

Abstract (1.2.1)
Be sure to include
- general content and features
- data set form (GIS, CAD, image, Dbase)
- geographic coverage (county/city name)
- time period of content (begin and end date or single date)
- special data characteristics or limitations

Supplemental_Information (1.2.3)

A comment field in which you can:

- place information that is not elsewhere covered
- 'front' important information such as related studies, data set limitations, and notifications

Time_Period_of_Content (1.3)

The relevant date of the data content. Can be a single date, multiple dates, or a range of dates.

Currentness_Reference (1.3.1)

The context for the Time_Period_of_Content. For example: an orthophotograph may have been compiled and delivered in June (publication date) but flown in February (ground condition).

Theme_Keyword (1.6.1.1)

Include broad and specific terms and use controlled vocabularies (thesauri) when possible.

- Include at least one ISO Topic Category (see listing page __)
- ISO Topic Category Thesauri = *ISO 19115 TopicCategoryCode*
- Include additional descriptive terms to qualify Topic Category

Place_Keyword (1.6.2.1)

Include specific and regional references such as:

- city or county name
- state
- state acronym
- regional descriptions and references e.g., Appalachia, Puget Sound, DelMar Peninsula, etc.

Stratum_Keyword (1.6.3)

For use in atmospheric, geologic, and oceanographic data, e.g., ionosphere, surface, seafloor

Temporal_Keyword (1.6.4)

For use in scientific and historical data, e.g., diurnal, Ming dynasty, Machine Age

Access_Constraints (1.7)

Any restrictions or legal prerequisites to accessing the actual data set. Commonly applies to data sets that are exempt from public records laws such as endangered species, personal health, and intellectual properties.

Use_Constraints (1.8)

Any restrictions or legal prerequisites to using the data set. Common constraints include:

- must read and fully comprehend the metadata prior to data use
- acknowledgement of the Originator when using the data set as a source
- sharing of data products developed using the source data set with the Originator
- data should not be used beyond the limits of the source scale
- the data set is NOT a survey document and should not be utilized as such

Point_of_Contact (1.9)

The individual or organization that is knowledgeable about the data set and should be contacted with questions.

Data_Set_Credit (1.11)

Identify others that should be recognized for their contributions to the data set. This includes data development contractors as discussed, above, for Originator.

Native_Data_Set_Environment (1.13)

Optional but highly recommended

- software and version
- operating system and version
- platform

Section 2: Data Quality

Attribute_Accuracy_Report (2.1.1)

How sure are you that it IS a pine tree?
Assessments as to how 'true' the attribute values may be. May refer to field checks, cross-checks with other documents, statistical analysis of values, and parallel independent measures. It does NOT refer to the positional accuracy of the feature.

Logical_Consistency_Report (2.2)

Did you check for bad values and conditions?
Tests used to check for data inconsistencies including topological checks (clean and build), and data base QA/QC routines such as: Are the X values always between '0' and '100'? Are all 'Y' values text format? Does value Z always equal the sum of values 'R' and 'S'?

Completeness_Report (2.3)

Is there anything I might expect to be in the data set that isn't?
Identification of data omitted from the data set that might normally be expected, as well as the reason for the exclusion. This may include geographic exclusions, 'data was not available for the South Shores neighborhood'; categorical exclusions 'municipalities with populations under 1,000 were not included'; and definitions used '*floating marsh* was mapped as *land*'.

Positional_Accuracy_Report (2.4)

How sure are you that the pine tree is where you say it is?
Assessments as to the horizontal and/or vertical location of the feature. May refer to field checks, Maximum Allowable PDOP, survey quality, cross-checks with other locational references, etc.

Process_Step (2.5.2)

Can be a single collective description or individual process steps based upon;

- stages of processing
- incorporation of sources
- project milestone

Process_Contact (2.5.2.6)

The individual responsible for the data processing and 'putting' the data together.

Cloud_Cover (2.6)

- leave blank for GIS and digital map files
- include values for imagery and photography
  NOTE: this fields requires an integer, text responses should not be used.
  - '0' through '99' indicate percent of the image obscured by cloud cover
  - '100' indicates the value is unknown.

Section 3: Spatial Data Organization

Indirect_Spatial_Reference (3.1)

Any precise method of locating the data sans coordinates. Includes:

- Geographic Names Index System (GNIS) place names
- Public Land Survey System (PLSS) locations
- Federal Information Processing System (FIPS) location codes

Direct_Spatial_Reference_Method (3.2)

Indicate 'vector' or 'point' or 'raster'. Cannot select more than one.

SDTS_Point_and_Vector_Object_Type (3.3.1.1)

- for GIS files use 'Autocapture' feature of SMMS or ArcCatalog to populate
- see SDTS Definition Object Types at
  http://mcmcweb.er.usgs.gov/sdts/SDTS_standard_nov97/part1b10.html#152231

Section 4: Spatial Reference

Horizontal_Coordinate_System_Definition: (4.1)

Description of the reference frame for horizontal position. Can be **one** of the following:

- geographic
  Latitude / Longitude
- map projected
  Albers, Lambert, Transverse Mercator, Polar Stereographic, etc.
- grid coordinate system
  UTM, State Plane, ARC, Universal Polar Sterographic, etc.
- local planar
  Coordinate Geometry (COGO), rows/columns, etc.
- locally-defined
  oblique photography, unrectified imagery

Abscissa_Resolution (4.1.2.4.2.1) / Ordinate Resolution (4.1.2.4.2.2)

The smallest distance that can exist between two points. The value is almost always the same for both the X axis (abscissa) and the Y axis (ordinate) but may differ for non-square pixels.

- Vector data
  This is commonly the 'fuzzy tolerance' or 'clustering' setting that establishes the minimum distance at which two points will NOT be automatically converged by the data collection device (digitizer, GPS, etc.)
- Raster data
  The values normally represent the pixel size, e.g. for Thematic Mapper (TM) imagery, the value would be '30'.

Note: this must be a real number and the units of measure are recorded as Planar_Distance_Units (4.1.2.4.4) (see next item).

Planar_Distance_Units (4.1.2.4.4)

The units of measures for the Coordinate_Representation (abscissa/ordinate resolution) or the Distance_and_Bearing_Representation. For the TM example provided above the units of measure would be 'meters. For the fuzzy tolerance example provided above, the units of measure would commonly be 'millimeters'.

Section 5: Entity and Attributes

Detailed_Description (5.1)

Provide a detailed description if your database if not documented in anther form such as a data dictionary or data specification manual.

Attribute_Domain_Values (5.1.2.4)

Domain types

- Enumerated Domain
  a defined set of possible values, a picklist
  example: Anderson land cover classes
- Range Domain
  a sequence, series, or scale that has a defined maximum and minimum values - can be numeric or alphabetical
  example: date fields
- Codeset Domain
  any published codeset
  examples: USGS Digital Line Graph codes, FIPS codes
- Unrepresentable Domain
  any value that is not prescribed
  example: names

Overview_Description (5.2)

Provide an overview description if:

- your database is well-documented as a data dictionary, data specification manual, or some other format, AND you can provide data consumers a citation for the document and, if applicable, a website link to the document.
- your database is minimal and you can adequately describe in a short descriptive paragraph. For example, for a black and white orthophotograph, you may want to indicate that each pixel will have a gray scale value between 0 (black) and 255 (white). Be sure to explain any unclear attribute labels and codes.

Section 6: Distribution Information

Distributor_Contact (6.1)

The individual or organization that distributes the data.

Distribution_Liability (6.3)

A statement of the liability assumed by the Distributor. A legal-like section that may:

- deny liability if the data are incorrect, incomplete, or misused
- limit third party distribution of the data set

Section 7: Metadata Reference

Metadata_Date (7.1)

The date that the metadata is written or completed. Like other date fields, it can be a single date, multiple dates, or a range of dates.

Metadata_Contact (7.4)

The individual or organization that is responsible for the metadata for the data set.

Metadata_Standard_Name (7.5)

As of Oct 2002: *Content Standard for Digital Geospatial Metadata*

Metadata_Standard_Version (7.6)

As of Oct 2002: *FGDC-STD-001-1998*

Metadata_Access_Constraints (7.8)

Restrictions and legal prerequisites for accessing the metadata (not the data). With the exception of classified information and intellectual properties, the response is almost always 'none'. Even if a data set is exempted from public record laws (endangered species locations, personal health data, etc.) the metadata is typically fully accessible.

Metadata_Use_Constraints (7.9)

Restrictions and legal prerequisites for using the metadata (not the data) after access is granted. This may applicable for the protection of privacy or intellectual properties.

ISO 19115 Topic Categories from ISO/DIS 19115

Farming
e.g., agriculture, crops, livestock

Biota
e.g., flora and fauna, ecology, wetlands, habitat

Boundaries
e.g., political and administrative boundaries

ClimatologyMeteorologyAtmosphere
e.g., processes and phenomena of the atmosphere

Economy
e.g., business and economics

Elevation
e.g., altitude, bathymetry, dem's, slope, derived products

Environment
e.g., natural resources, pollution, impact assessment, monitoring, land analysis

GeoscientificInformation
e.g., geology, minerals, earthquakes, landslides, volcanoes, soils, gravity, permafrost, hydrogeology, erosion

Health
e.g., disease, illness, factors affecting health, hygiene, substance abuse

ImageryBaseMapsEarthCover
e.g., land cover, topographic maps, imagery, annotations

IntelligenceMilitary
e.g., military bases, structures, activities

Inland Waters
e.g., rivers, glaciers, lakes, water use plans, dams, currents, floods, water quality, hydrographic charts

Location
e.g., addresses, geodetic networks, control points, postal zones, place names

Oceans
e.g., tides, tidal waves, coastal information, reefs

PlanningCadastre
e.g., land use maps, zoning maps, cadastral surveys, land ownership

Society
e.g., anthropology, archaeology, religion, demographics, crime and justice

Structure
e.g., architecture, buildings, museums, churches, factories, housing, monuments, shops, towers

Transportation
e.g., roads, airports, airstrips, shipping routes, tunnels, nautical charts, vehicle and vessel locations, aeronautical charts, railways, trails

UtilitiesCommunication
e.g., hydroelectricity, geothermal, solar, and nuclear sources of energy, water purification and distribution, sewage collection and disposal, electrical and gas distribution, data communication, telecommunication, radio, communication networks